

## Claims

1. An antenna arrangement comprising a multiple throw switch arranged to couple one of one or more strip or microstrip lines to an antenna element.

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2. An antenna arrangement as claimed in any preceding claim, in which the antenna arrangement comprises a load element capacitively coupled to the antenna element, the switch being connected to the load element.

10 3. An antenna arrangement comprising a load element capacitively coupled to an antenna element, and a switch arranged to connect one of one or more strip or microstrip lines to the load element.

4. An antenna arrangement as claimed in claim 3, in which the switch is a multiple throw switch.

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5. An antenna arrangement as claimed in any of claims 2, 3 and 4, in which the load element is a patch.

20 6. An antenna arrangement as claimed in any preceding claim, in which the antenna element is a patch.

7. An antenna arrangement as claimed in any preceding claim, in which the switch is connected to at least two or more strip or microstrip lines.

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8. An antenna arrangement as claimed in any preceding claim, in which one throw of the switch is connected to a strip or microstrip line of substantially zero length.

30 9. An antenna arrangement as claimed in any preceding claim, in which one of the strip or microstrip lines, when coupled to the antenna element via the switch, provides a substantially open circuit at an operating frequency of the antenna arrangement.

10. An antenna arrangement as claimed in any preceding claim, in which one of the strip or microstrip lines, when coupled to a or the antenna element via the switch, provides a substantially short-circuit at an operating frequency of the  
5 antenna arrangement.
11. An antenna arrangement as claimed in any preceding claim, in which one of the strip or microstrip lines, when coupled to a or the antenna element via the switch, provides an impedance between a short and an open circuit at an operating  
10 frequency of the antenna arrangement.
12. An antenna arrangement as claimed in any preceding claim, in which at least one of the strip or microstrip lines is connected to ground at its end opposite to the switch  
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13. An antenna arrangement as claimed in any preceding claim, in which at least one of the strip or microstrip lines is insulated from ground at its end opposite to the switch
- 20 14. A radiotelephone including an antenna arrangement as claimed in any preceding claim.

## Claims

1. An antenna arrangement including:  
an antenna element;  
5 a load element capacitively coupled to the antenna element; and  
a frequency adjusting arrangement for tuning the antenna element,  
wherein the frequency adjusting arrangement comprises a switch arranged to  
connect one of one or more strip or microstrip lines to the load element.
- 10 2. An antenna arrangement as claimed in claim 1, in which the switch is a  
multiple throw switch.
3. An antenna arrangement as claimed in either preceding claim, in which the  
load element is a patch.
- 15 4. An antenna arrangement as claimed in any preceding claim, in which the  
antenna element is a patch.
5. An antenna arrangement as claimed in any preceding claim, in which the  
20 switch is connected to at least two or more strip or microstrip lines.
6. An antenna arrangement as claimed in any preceding claim, in which one of  
two or more throws of the switch is connected to a strip or microstrip line of  
substantially zero length.
- 25 7. An antenna arrangement as claimed in any preceding claim, in which one of  
the strip or microstrip lines, when coupled to the antenna element via the switch,  
provides a substantially open circuit at an operating frequency of the antenna  
arrangement.
- 30 8. An antenna arrangement as claimed in any preceding claim, in which one of  
the strip or microstrip lines, when coupled to the antenna element via the switch,

provides a substantially short-circuit at an operating frequency of the antenna arrangement.

9. An antenna arrangement as claimed in any preceding claim, in which one of  
5 the strip or microstrip lines, when coupled to the antenna element via the switch,  
provides an impedance between a short and an open circuit at an operating  
frequency of the antenna arrangement.
10. An antenna arrangement as claimed in any preceding claim, in which at least  
10 one of the strip or microstrip lines is connected to ground at its end opposite to the  
switch
11. An antenna arrangement as claimed in any preceding claim, in which at least  
one of the strip or microstrip lines is insulated from ground at its end opposite to  
15 the switch
12. A radiotelephone including an antenna arrangement as claimed in any  
preceding claim.